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Remarks

Claims 1-3, 7, 8, 11, and 13-20 were pending in the application. Claims 1-3, 7, 8, 11, and 13-20 were rejected. No claims were merely objected to and no claims were allowed.

Claim Rejections-35 U.S.C. 103

Claims 8, 11, 13, and 17-19 were rejected under 35 U.S.C 103(a) as being unpatentable over Kocher (US3577742) in view of Lifson (US6474087). Applicants respectfully traverse the rejection.

Claims 1 and 20 were rejected under 35 U.S.C 103(a) as being unpatentable over Tinkey (US3108453). Applicants respectfully traverse the rejection.

Claims 7 and 16 were rejected under 35 U.S.C 103(a) as being unpatentable over Tinkey in view of Kramer, Jr. (US228834). Applicants respectfully traverse the rejection.

Claims 2 and 3 were rejected under 35 U.S.C 103(a) as being unpatentable over Tinkey in view of Lifson. Applicants respectfully traverse the rejection.

Claims 14 and 15 were rejected under 35 U.S.C 103(a) as being unpatentable over Tinkey in view of Kramer, Jr. and further in view of Lifson. Applicants respectfully traverse the rejection.

Combined Discussion

Independent Claim 1: Only the Tinkey rejection was made against claim 1. However, Tinkey teaches the opposite positioning of that claimed in claim 1. Regarding the heat exchanger location of this claim, the Office Action at page 3, first paragraph referenced FIG. 7 and col. 4, lines 52-66 of Tinkey and asserted that the hypothesized rearrangement "is considered to have been an obvious matter of engineer design based upon the location of the two evaporators since the result will not be sufficiently different, i.e. both heat exchangers will provide subcooling of the refrigerant leaving the condenser regardless of which is connected to the condenser outlet first."

Merely hypothesizing that the modification could be attempted is not a motivation for the modification.

The first and second evaporators were identified as 5 and 6, respectively. The first heat

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exchanger is represented by the "stabilizer shell 23" and the second by the similar unnumbered structure therebelow on the drawing sheet. Refrigerant from Tinkey's condenser, however, first enters the first heat exchanger 23 and then passes into the second heat exchanger. Col. 4, lines 65-66. Thus, Tinkey's first exchanger donor conduit is upstream of its second heat exchanger donor conduit rather than downstream as claimed in claim 1. See present FIG. 3. Tinkey teaches operation responsive to the relative back pressures associated with the two evaporators. Col. 2, lines 23-29.

There is no clear indication that Tinkey would advantageously function, if at all, with the hypothesized reconfiguration of the Office action. There is no suggestion in Tinkey or the other references that one of ordinary skill would have any expectation of functionality, let alone advantageous performance by making the modification. The final full paragraph of page 4 of the Office action mischaracterizes this statement by first asserting that applicant "further argues that there is no indication that the Tinkey reference would advantageously function, it [sic] at all." That paragraph goes on to further assert: "With regards to the supposition that the Tinkey [sic] invention would not advantageously function, the Office gives full faith and credit to the operability of a disclosed patented invention." However, the exact statement made in the prior amendment and repeated above is: "There is no clear indication that Tinkey would advantageously function, if at all, with the hypothesized reconfiguration of the Office action. There is no suggestion in Tinkey or the other references that one of ordinary skill would have any expectation of functionality, let alone advantage [sic] performance by making the modification." Amendment, page 7, first paragraph. The Office is welcome to give full faith and credit to the operability of Tinkey as structurally disclosed and for the purposes disclosed and in the way disclosed. Nevertheless, there is no basis for assuming operability, let alone advantageous performance, of a hindsight hypothesized modification for which there is no suggestion other than the guess that "both heat exchangers will provide subcooling of the refrigerant leaving the condenser regardless of which is connected [sic] the condenser outlet first." Office action, page 4, final paragraph. This is at best a conjecture that the Tinkey system might have some residual functionality with the modification (which thus highlights the hindsight nature of the combination).

The claims depending from claim 1 are similarly patentable. There is no suggestion to

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combine with Lifson. The structure of Tinkey is intimately connected to the particular piston compressor disclosed. Thus, regardless of the well known status of scroll or screw compressors, there is no suggestion to so modify Tinkey.

Independent Claim 7: Similarly, the Tinkey in view of Kramer, Jr. rejection is the only rejection made against claim 7. However, Kramer, Jr. merely shows the running of multiple evaporators in parallel on a single compressor. The Office action offered only the conclusory motivation "in order to provide refrigerant from the condenser outlet to each heat exchanger connected to the outlet of the evaporators..." Office action, page 4, first paragraph. Even if one were to attempt a combination, there is no suggestion for it to be the claimed combination. For example, one might adopt the parallel branching of Kramer, Jr. by adopting multiples of Tinkey's element 5 (each with an associated 9) but coupled in common to 23. See Tinkey FIG. 7. This would still have the series flow through the heat exchangers (cited as element 23 and the similar unnumbered element below). This would not yield the claimed branching (parallel) flow through the heat exchangers. See present FIG. 4. Thus, whereas present FIG. 3 and claim 1 identify an opposite direction of series flow to that taught by Tinkey, claim 4 is a parallel flow not suggested by Tinkey or any combination of references.

The asserted "well known" nature of parallel flow heat exchangers generally does not establish obviousness. The conclusory statement that "it would have been well within the skill of those in the art to incorporate this arrangement in the Tinkey reference" is misleading. Clearly, it would be within the mechanical skill of one of ordinary skill in the art to recreate the present device based upon the present teachings. That's enablement. However, there is no indication that it would have been obvious to one of ordinary skill in the art to make any modification, let alone one resulting in the claimed system. The sentence spanning pages 5 and 6 and repeated elsewhere is a nonsequitur referring to "connectivity of the pistons... in both screw and scroll compressors". Screw and scroll compressors, however, lack pistons.

The claims depending from claim 7 are similarly patentable. There is no suggestion to combine with Lifson. The structure of Tinkey is intimately connected to the particular piston compressor disclosed.

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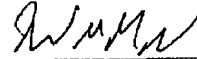
Independent Claims 8 and 11: Similarly, the Kocher in view of Lifson rejection is the only rejection made against independent claims 8 and 11. See present FIG. 5. The citation is insufficient for several reasons. First, Lifson was cited for "the use of an economizer connected to the intermediate port of the compressor in order to increase performance of the system in view of the teachings of Lifson." However, Kocher itself discloses an economizer in the form of a flash chamber 40 connected to the port 20 in FIG. 2. Accordingly, Kocher does not need Lifson for the teaching of an economizer. Furthermore, Kocher's FIG. 1 was cited for the primary reference. Kocher teaches the economizer (Kocher FIG. 2) and the second evaporator (Kocher FIG. 1) as alternative structures, thus teaching away from their combination. The discussion in the complete paragraph of page 6 is not understood. The fourth sentence of that paragraph reads "The applicant has not provided any evidence that the alternative structure for the economizer and second evaporator would cause the economizer and evaporator to function any differently than they would if they were in combination with one another." This is a nonsequitur. Kocher teaches that they are alternative structures. The Office action failed to identify how they are taught to be combined. There is no indication, for example, how one would modify the Kocher FIG. 1 system in view of Lifson. The mere assertion that Lifson would teach adding an economizer is insufficient. As clearly noticed by Kocher's FIG. 2, the concept of adding an economizer is clearly taught to be implemented by removing one of the evaporators. Without being provided a detailed analysis of the particular modification to Kocher's FIG. 1, Applicants are not in a position to comment on how the hypothesized second evaporator (E') would continue to function if such system were modified with an economizer.

The claims depending from claims 8 and 11 are similarly patentable.

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Accordingly, Applicant submits that claims 1-3, 7, 8, 11, 13-20 are in condition for allowance. Please charge any fees or deficiency or credit any overpayment to our Deposit Account of record.

Respectfully submitted,

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I hereby certify that this correspondence is being facsimile transmitted this 13th day of April, 2007 to the USPTO, at Fax No. 571-273-8300.


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